

EXHIBIT 2

In The Matter Of:

*THE CITY OF NEW YORK, ET AL v.
EXXON MOBIL CORPORATION, ET AL*

*VOLUME 8
August 12, 2009*

*TRIAL
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[1] A. When I say an underground storage tank system, I'm talking
[2] about the complete system. So that would be the underground
[3] tank. Typically also includes several pipes attached to the
[4] top of the tank, it includes a pumping system for moving the
[5] fuel out of the tank, the piping system to carry the fuel out
[6] of the tank to a dispenser where folks can dispense or buy the
[7] fuel and put it into a vehicle. So all of those components
[8] together form an underground storage tank system.

[9] Q. We're going to talk about various pieces of the system as
[10] we go along.

[11] Aren't the operators of gas stations, don't they have
[12] a motivation to discover and cure any leaks from a system?

[13] A. Certainly gasoline is an expensive commodity these days and
[14] people want to keep track of it. And if it's a large leak in a
[15] short period of time, then, yeah, they will pay attention or
[16] have it brought to their attention that they have a release.
[17] But if it's a much smaller volume release, and it's happening a
[18] little bit at a time, it's very difficult to detect and very,
[19] very difficult to notice. If you're selling several thousands
[20] of gallons of gasoline a day, and you're losing a gallon or
[21] less, that's like a fraction of a percent. It's very difficult
[22] to notice that. If you had a \$50 dollar bill in your wallet
[23] and you lost that, you would probably notice, but if you lose a
[24] penny out of your pocket, not too many people would notice that
[25] that penny was missing.

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[1] Q. So is there a way that you're able to characterize for the
[2] jury to understand how much leaks from gas stations?

[3] A. I'm not sure I understand the question.

[4] Q. Well, if individual incidents are typically small, how is
[5] the jury to understand over time how much is lost from a gas
[6] station?

[7] A. Well, because the sum total of the releases over fairly
[8] lengthy periods of time can add up to a significant quantity, a
[9] significant mass of gasoline can be lost if the release
[10] continues to occur on a daily basis.

[11] Q. You mentioned earlier that a short-term sudden or over a
[12] few days loss of a substantial amount of gasoline would show up
[13] in the cash register. Those are my words, not yours. Why if
[14] the volume of gasoline that's lost is the same doesn't it show
[15] up in the cash register the same if it's over time?

[16] A. Well, because over time the amount of money going through
[17] the cash register is quite large, all right? But the amount of
[18] money that's lost on a daily basis might be a very small
[19] fraction of that, all right? Again, going back to the penny,
[20] if you lose a penny out of your pocket, it's probably not going
[21] to make a big hole in your bank account. Even if you lose a
[22] penny a day, it's probably still not going to show up in your
[23] bank account.

[24] Q. You referred to a gas station selling a thousand gallons a
[25] day. Is that a typical number of any kind?

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[1] A. I think that would probably be on the low end of a station
[2] that's operating today. Typically you would be selling a
[3] thousand to several thousand gallons a day.

[4] Q. So in your experience how much damage can small releases,
[5] depending on the equivalent do?

[6] A. It depends what's in the gasoline. In the days before the
[7] 1980's when there was not MTBE in the gasoline, those small
[8] leaks were a recurring event, as they are now, they didn't
[9] travel very far, they tended to stay relatively close to the
[10] source, the origin of the release. When MTBE was put into the
[11] gasoline in the 1980's, that situation changed very
[12] dramatically, that the MTBE was able to travel much further
[13] from the source and cause much more significant problems.

[14] Q. I want to go back to spend a little bit more time on your
[15] background so the jury can understand where you're coming from
[16] as you talk about these topics.

[17] You mentioned that you have a degree in geology.
[18] Where was that from?

[19] A. The degree in geology was from Williams College,
[20] Williamstown Massachusetts.

[21] Q. Do you have any more advanced degrees?

[22] A. I have a Master's degree in oceanography from University of
[23] Maine.

[24] Q. What does a degree in oceanography have to do with
[25] underground storage tanks?

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[1] A. Not a whole lot.

[2] Q. Has the degree in geology been helpful in your work in your
[3] current field?

[4] A. Yes, it has. When I first got into underground storage
[5] tanks, I was hired as a geologist by the State of Maine with a
[6] part of the job description was to investigate underground
[7] storage tank releases.

[8] Q. When was that?

[9] A. That was in January of 1983.

[10] Q. What was that job? How did it relate to underground
[11] storage tanks?

[12] A. The job description had two components. The first part, as
[13] I just said, was to investigate releases from underground
[14] storage tanks. The State of Maine had just begun to be
[15] responsible for groundwater and for petroleum contamination of
[16] groundwater and they were seeing an increase in the number of
[17] incidents that came to their attention. So they wanted
[18] additional staff to deal with that, so that was part of my job
[19] description was to investigate releases.

[20] Q. When you say incidents, what are you talking about?

[21] A. Leaks and spills. Releases.

[22] Q. From a gas station?

[23] A. Typically at gas stations, but it mainly had releases of
[24] things like heating oil.

[25] Q. I think I cut you off. You were saying the other part of

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[1] am I right?

[2] **A.** I don't believe that was my opinion, that's correct. It

[3] does not automatically mean that there's a leak.

[4] **Q.** And what you have to do is look at a trend over time as you

[5] showed the jury, am I correct?

[6] **A.** You have to look at trends, you have to look at a lot of

[7] things before you can determine that the inventory loss, that

[8] the unaccounted for product in your inventory records is in

[9] fact in the ground and not somewhere else.

[10] **Q.** And you can have unaccounted for product as much as 1/2 of

[11] 1 percent of how much throughput gasoline you sell through a

[12] gas station, and that doesn't necessarily translate to a leak

[13] or spill going out into the environment, right?

[14] **A.** You could have greater losses than that, and it wouldn't

[15] necessarily mean that you had product going into the

[16] environment. There are other causes for variances.

[17] **Q.** Okay. Now, you were also asked questions about timing of

[18] releases, and you were also asked questions about volume, and

[19] with a few minutes left, I'd like to see if I can hit on a few

[20] topics.

[21] First and foremost, there's one station that you've

[22] identified that you believe you can actually quantify how much

[23] gasoline was released, am I correct?

[24] **A.** We can estimate, yes.

[25] **Q.** And that is 84-04 Parsons?

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[1] **A.** That is correct.

[2] **Q.** With regard to all of the other 99 service stations that

[3] are out there, you didn't look at all, you didn't look at

[4] records for all 99, am I correct?

[5] **A.** You're referring to the 99 in the capture zone.

[6] **Q.** In or near the capture zone.

[7] **A.** In or near the capture zone, I looked at I believe 24

[8] facilities before that, so there are another 75 or thereabouts

[9] that I did not look at.

[10] **Q.** And the other 75 or so that you did not look at, you have

[11] no evidence one way or the other as to whether there was a leak

[12] or spill at that, except your experience?

[13] **A.** My experience indicates that if those facilities operated

[14] for any length of time they would have had releases.

[15] **Q.** And based on the information that you've seen in this case,

[16] or reviewed in this case, are you able to state an opinion to

[17] some reasonable degree of scientific certainty that for those

[18] 75 stations each one of them had a leak or spill greater than

[19] 2,000 gallons of gasoline with MTBE?

[20] **A.** For an individual facility, I cannot. If we look at an

[21] average over all 100 facilities, I think we can state a minimum

[22] estimate for the amount that might have been released over a

[23] lengthy period of time.

[24] **Q.** But as to each one of those individual stations, are you

[25] able to state an opinion for the 75 that are out there that you

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[1] haven't seen records, can you tell this jury with reasonable

[2] certainty that there actually was a leak or spill of

[3] 2,000 gallons of gasoline with MTBE in it?

[4] **A.** I can't point to a specific point in time and say there was

[5] a release on this day at this time. That a significant amount

[6] of product was released from each of those sites over a 15-year

[7] time frame, I think I can state an opinion to that effect.

[8] **Q.** But you have no soil data to show them for those 75

[9] stations that there actually was some contamination of the

[10] soil, am I correct?

[11] **A.** There was, there's no, there were no soil sample, well, I

[12] have not looked at any soil samples from any of those

[13] facilities.

[14] **Q.** And from those 75 facilities, you have no monitoring well

[15] data that you can tell this jury there's some MTBE in the

[16] groundwater beneath those stations, am I correct?

[17] **A.** I have not looked at any monitoring well data from any of

[18] those sites.

[19] **Q.** And with regard to the remaining stations for which you

[20] actually looked at records, you have 21 of them. Can you tell

[21] the jury based on each one of the station files you reviewed,

[22] that each one of those stations had a release of 2,000 gallons

[23] or more of MTBE with gasoline? Pardon me, gasoline with MTBE?

[24] **A.** Which 21 are we talking about?

[25] **Q.** We're talking about, take out 84-04 Parsons. Put that one

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[1] aside, we're going to talk about that one tomorrow. With

[2] regard to the other 21 stations that you looked at, can you

[3] state an opinion to a reasonable degree of scientific or

[4] engineering probability that each one of those stations for

[5] which you looked at files had a leak of gasoline with MTBE in

[6] excess of 2,000 gallons?

[7] **A.** I can't point to a specific date and time that such a

[8] release might have occurred, but over the time when MTBE was

[9] present in the gasoline, I think I can conclude that there was

[10] a substantial volume released over time on average from a

[11] number of different facilities.

[12] **Q.** And with respect to each one of them, can you tell this

[13] jury as you sit here right now, each one of them based on the

[14] documentation you reviewed, had a spill or leak that resulted

[15] in 2,000 gallons of gasoline with MTBE being released in the

[16] groundwater at that site?

[17] **A.** Can't point to a specific date or time for a 2,000 gallon

[18] release, but if they were operating for a significant portion

[19] of the time and MTBE was present, then I can state that on an

[20] average there was significant releases of MTBE gasoline from

[21] those sites.

[22] **Q.** And with regard to timing, as to the stations that you've

[23] looked at, for which you had files, that universal 22, can you

[24] tell the jury in this particular case when gasoline with MTBE

[25] was first released into the environment at any of those

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[1] point, that's correct.

[2] **Q.** Was there any cleanup, any groundwater cleanup to remove

[3] MTBE at this site based on the records you reviewed?

[4] **A.** They appear to have been pumping groundwater out of some of

[5] the monitoring wells with a vacuum truck. I don't see any

[6] other activity in the site summary that I would classify as

[7] remedial activity.

[8] **Q.** Directing your attention to Page 2 of your summary, you

[9] indicate that the maximum concentration of MTBE measured on the

[10] site was 17,000 parts per billion in 2006. Am I correct?

[11] **A.** February of 2006, that was the level that was measured.

[12] **Q.** Tell the jury what the amount was measured in 2008 as the

[13] maximum that you noted in your notes?

[14] **A.** In August of 2008, the level of MTBE in monitoring Well 1

[15] was 6.6 parts per billion.

[16] **Q.** On the first page of that summary for the Atlas station

[17] which is in the vicinity of Well 6, and so we can see the

[18] different context, can you bring up slide 44, please for the

[19] jury to see that.

[20] And so we're clear, you actually initialed this, you

[21] prepared this summary, am I correct, your initials are in the

[22] upper-left-hand corner?

[23] **A.** That's correct.

[24] **Q.** With regard to that --

[25] **MR. SHER:** Your Honor, this is very confusing. This

[1] continue on, no problem.

[2] **THE COURT:** Okay.

[3] **BY MR. STACK:**

[4] **Q.** With regard to this station, can you tell the jury to a

[5] reasonable degree of scientific probability regarding whether

[6] or not there was a release at this station of 2000 gallons of

[7] gasoline with MTBE in groundwater?

[8] **A.** I can't point to a specific time or specific event. It

[9] indicates there was a release of 2000 gallons at this place,

[10] but overall on average facilities tended to have releases of

[11] gasoline over time, thousands of gallons.

[12] **Q.** Overall on average, this particular location, the

[13] concentration of MTBE dropped to less than 10 parts per billion

[14] in two years, am I correct, based on your notes?

[15] **A.** Sorry. I lost the date of the first analysis.

[16] **Q.** The first analysis is 2006. The second analysis is 2008.

[17] You observed over the two-year period at this station

[18] the MTBE concentration goes down. Am I correct?

[19] **A.** That is correct based on the numbers that I saw in the

[20] reports.

[21] **Q.** That is based on that impact is a result of what you think

[22] is the average of releases that occur in this area from various

[23] pieces of equipment in the station. Am I correct?

[24] **A.** That would be the -- sorry, the impacts what, the

[25] specifically the 2000?

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[1] image on the screen is not what the witness is talking about.

[2] **MR. STACK:** I'll go back to the other one. If counsel

[3] objects, that is fine.

[4] **A.** My initials are on the site summary report I am looking at

[5] in front of me on the stand, not the slide on the screen.

[6] **BY MR. STACK:**

[7] **Q.** I apologize. I know you had nothing to do with the slide

[8] on the screen. The last sentence of the summary, you indicate

[9] in your summary MTBE levels decline until they are below 1 part

[10] per billion in August of 2008. Am I correct?

[11] **A.** That is correct reading of what is in the site summary,

[12] that's correct.

[13] **Q.** With regard to the 10 parts per billion, that is the

[14] groundwater standard set by the New York --

[15] **MR. SHER:** Objection, your Honor. Those standards are

[16] not in issue in this phase of the case. The levels of the --

[17] the implications, the significance of those standards are not

[18] in issue in this phase.

[19] **THE COURT:** That is true.

[20] **MR. STACK:** We are not talking about health standards;

[21] we are talking about cleanup standards. They are very much a

[22] part of this case.

[23] **THE COURT:** You're talking about phase, this phase,

[24] not this case, this phase. You know what this phase is --

[25] **MR. STACK:** Understood as to phase, your Honor. I'll

[1] **Q.** 2008. In 2008 we go out there and we test the groundwater.

[2] It has 6.6 parts per billion. That is what we see in

[3] groundwater at a site where you can't identify a specific

[4] spill, but they're, in your opinion, on average have been

[5] spills at the surface, leaks from the tanks, that's the

[6] consequence, 6.6 parts per billion?

[7] **A.** At that point in time.

[8] **Q.** Now, with regard to the review you did, you also looked at

[9] a BP station? And BP station, if you look at Tab 13, Tab 13

[10] relates to a parts per billion BP station at 165-25 Liberty?

[11] **A.** Excuse me. My Tab 13 is 162-35 North Conduit.

[12] **Q.** Then it should be 14. You're absolutely right.

[13] This BP station is located in the vicinity of Station

[14] 6. Am I correct?

[15] **A.** I accept your representation on the map. Otherwise, I

[16] really don't have a good feel for where it might be located

[17] except for what you have drawn on the map.

[18] **Q.** Fair enough. So we're clear, that is Mr. Terry's map of

[19] the stations he reviewed. I don't want you to be misled. That

[20] is not my method, okay?

[21] With respect to this particular station, you observed

[22] contamination in the subsurface in part of your review and

[23] concluded there was a release of gasoline here of MTBE. Am I

[24] correct?

[25] **A.** There was gasoline in the groundwater and there was

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[1] three Coke cans.

[2] We are talking three Coke cans per facility, so if
[3] there are five cans at a facility that is actually being
[4] released by a particular tank, that is quite small. The total
[5] amount of 2,000 gallons, that sounds like a lot. If you're
[6] spreading that out or taking that in chunks over a 15-year
[7] period, it is really quite a small release volume.

[8] Q. In your experience, are there many stations that do not
[9] experience a release of about three and a half Coke cans on a
[10] day?

[11] A. On an average. I don't know that they're releasing exactly
[12] that amount on exactly every day, but I think if you look over
[13] an extended period of time and look at the amount that may have
[14] been released and average it out, that is what it comes down
[15] to.

[16] Q. If the station is active with MTBE in the gasoline over a
[17] period of 10 years instead of 15 years, is there a way of
[18] understanding the magnitude of daily release for an average of
[19] 2,000 gallons?

[20] A. If you cut your time interval down from 15 years to 10
[21] years, I think the math ends up being it is about five Coke
[22] cans or thereabout per day per facility.

[23] Q. In your experience, are there many facilities that don't
[24] experience a loss of five Coke cans a day on average over time?

[25] A. On average over time, I think that would be a very,

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[1] probably a very conservative estimate of how much might be
[2] released over a significant period of time.

[3] MR. SHER: No further questions.

[4] RE CROSS EXAMINATION

[5] BY MR. STACK:

[6] Q. For the purposes of your work in this case, you told Mr.
[7] Sher that you have to know in terms of evaluating data at a
[8] site the relationship of the well to the source, whether there
[9] was remediation and the changes in the water table. Am I
[10] correct?

[11] A. I was referring to, if I am going to interpret or try to
[12] draw some conclusions from MTBE sample levels or any other
[13] contaminant concentration levels, you have to put those numbers
[14] in context in order to get a better handle on what they're
[15] going to be telling you.

[16] Q. With respect to the work you did in this case, did you
[17] undertake to do an analysis to determine where your
[18] concentrations of MTBE or other petroleum were in modern wells
[19] in relation to equipment?

[20] A. I did not rely -- let me rephrase that -- I looked
[21] primarily at soil contamination data. I don't present myself
[22] as a hydrogeologist. I don't study which direction the ground
[23] water is flowing. I primarily am concerned on where the
[24] contaminated soil was found.

[25] For example, if there is lots of contaminated soil

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[1] underneath a dispenser, that points to a dispenser release. If
[2] there is high concentrations of contamination around a fill
[3] pipe, then that points to a delivery spill or that kind of
[4] incident. I, generally speaking, don't go below the soil level
[5] into the ground water in terms of my analysis.

[6] Q. Sir, you didn't do an analysis of the relationship of where
[7] contamination was found in relation to equipment in terms of
[8] the ground water and subsurface contamination?

[9] A. In terms of ground water, in terms of where the contaminant
[10] goes after it leaves the soil, that is not my expertise.

[11] Q. With regard to remediation, did you take into account
[12] the effects of remediation on the amount of contamination
[13] present at the site in the ground water?

[14] A. Take into account in terms -- I'm sorry. I am not clear I
[15] understand.

[16] Q. I believe you just answered a question from Mr. Sher,
[17] saying that in order to interpret monitoring well data, you
[18] would have to know, among other things, whether there was
[19] remediation.

[20] Did you evaluate remediation to determine what effect
[21] it had on the amount of contamination water?

[22] MR. SHER: Your Honor, the witness just testified that
[23] he didn't interpret the monitoring well data for that purpose.

[24] MR. STACK: I am not asking about monitoring well
[25] data; I am asking about remediation, which is the second of the

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[1] three legs.

[2] THE COURT: Yes.

[3] THE WITNESS: When I answered Mr. Sher's question, I
[4] was speaking generally that those are the kinds of things that
[5] can influence ground water concentrations of MTBE.

[6] In terms of my analysis, I am not exactly clear on the
[7] question. I did not include -- I look at ground water levels
[8] or ground water contaminant levels because that is another clue
[9] what might have been going on. I didn't factor particular
[10] levels into my analysis, if that is the question.

[11] Q. That was not my question. I think my question was pretty
[12] clear, but I'll repeat.

[13] In the course of the work you did in this case, did
[14] you specifically undertake to do an analysis to determine what
[15] effect remediation, cleanup was having on the amount of MTBE
[16] observed in ground water?

[17] A. I did not as part of my work in this case attempt to
[18] determine -- let me see if I got this right -- how much a
[19] remediation, if they removed so many tons of dirt, that that
[20] removes so much MTBE from potentially contaminated ground
[21] water. Is that the question?

[22] THE COURT: Yes, the effect of remediation on the
[23] present of MTBE, the effect of remediation on the presence of
[24] MTBE.

[25] THE WITNESS: I did not take into account the

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[1] MR. STACK: I mean the one that's been treated with
[2] putting things on it to show plumes. I don't know where that
[3] came from.

[4] THE COURT: Do you know how the slide was created? He
[5] doesn't mean this slide. Apparently he means the next slide or
[6] two. Do you know who created the slide?

[7] THE WITNESS: The figure came from a book that was
[8] published in 2003. And a part of the book describes the site
[9] and what happened.

[10] THE COURT: Okay. And do you conclude based on your
[11] experience that that slide is a fair and accurate
[12] representation of what occurred?

[13] THE WITNESS: Yes.

[14] THE COURT: Then I'll allow it as a graphic
[15] demonstration only. Okay. Go ahead.

[16] MR. STACK: Thank you, your Honor.

[17] THE COURT: Yes.

[18] THE WITNESS: So in this case the release date was
[19] estimated to be 1985. And these are the conditions in 1999.
[20] It had a gas station here that leaked. And by 1999 we had a
[21] BTEX plume that was 1200 feet long, which is the green right
[22] here.

[23] If we click again, we see the MTBE plume at the same
[24] time, 1999, that is approximately 4500 feet long.

[25] Q. You said earlier that BTEX, the other parts of gasoline,

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[1] biodegrades relatively readily. Why is that BTEX plume still
[2] there? Why hasn't it gone from biodegradation?

[3] A. Well even BTEX plumes do not go away immediately. Over
[4] time, we would expect this BTEX plume to gradually shrink. But
[5] in this case, the time scale would be years to decades. But it
[6] varies depending on site conditions.

[7] Q. So for the BTEX to biodegrade, you're talking years to
[8] decades?

[9] A. Yes.

[10] The important thing is, in this case, if the plume is
[11] not continuing to move and contaminates larger volumes of the
[12] aquifer, it's less of a threat. If a plume is long or just
[13] continues to migrate, the likelihood that wells will be
[14] affected increases.

[15] This plume is limited -- they started remedial
[16] measures to pump out the MTBE plume next to this highway, to
[17] prevent it from moving across the highway. So that's one of
[18] the reasons this plume is not longer than 4500 feet.

[19] Q. And then did you also look at a MTBE plume at Vandenberg
[20] Air Force base?

[21] A. Yes.

[22] Q. Before we go to that slide, can you briefly tell us where
[23] it was you got the data?

[24] THE COURT: Where is that in the first place? Where
[25] is that Air Force base?

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[1] THE WITNESS: Vandenberg is in California.

[2] THE COURT: Also California.

[3] Q. Before you do that, can you tell us briefly where you got
[4] your information about that site from?

[5] A. From the published literature.

[6] Q. Before we see the slide, is that a fair and accurate
[7] representation of the plume as it's described in the
[8] literature?

[9] A. Yes.

[10] This is another well known plume. It's been
[11] investigated in detail by one of my colleagues at U.C. Davis.

[12] THE COURT: Do you know anything about the release
[13] that resulted in this plume, such as when it occurred and the
[14] quantity that was released.

[15] THE WITNESS: Off the top of my head, I do not.

[16] Here, again, we had both BTEX and MTBE released. The
[17] BTEX plume stayed very locale. And the benzene plume -- the
[18] MTBE plume moved much farther.

[19] THE COURT: Put you can't date this? You don't know
[20] when this is as of?

[21] THE WITNESS: They were both being released at the
[22] same time. In fact, the benzene.

[23] THE COURT: You don't know when that release date was
[24] at all?

[25] THE WITNESS: Not specifically. This was discovered

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[1] after the release had occurred, so.

[2] THE COURT: You don't know the lifetime? It could
[3] have been a year after, a week after, ten years after? You
[4] don't know the relationship between the release and this
[5] movement?

[6] THE WITNESS: The leak was discovered in 1994.

[7] THE COURT: It was discovered in '94. And this
[8] graphic would be as of when? Because I see something -- it has
[9] to be after '02 because it says aerobic in situ biobarrier
[10] installed in '02.

[11] THE WITNESS: By 1997, the plume was 700 feet long.

[12] So this was in the neighborhood of 1997. Because the plume is
[13] 1800 feet long here.

[14] So it was discovered in 1994. I don't know how big
[15] the plume was in 1994. Chances are most people -- nobody knows
[16] because they have to drill wells into the plume to define what
[17] it is at that point in time.

[18] THE COURT: So you don't know how it got here. You
[19] don't know what the release was.

[20] THE WITNESS: It was leaked from a leaking fuel tank.

[21] Again, you have BTEX which has been around longer than
[22] MTBE. The important point is the BTEX plume is shorter than
[23] the MTBE plume, which just highlights the fact that MTBE is
[24] more mobile and can contaminate larger volumes of groundwater
[25] than can BTEX.

[1] **THE COURT:** Mr. Stack.

[2] **MR. STACK:** Your Honor, so long as it's understood
[3] that these are illustrative and only for illustrative purposes.
[4] I'll clear it up on cross-examination.

[5] **THE COURT:** Obviously, it's only for demonstrative
[6] purposes. Okay.

[7] **Q.** Closer to New York City, did you look at a plume in Deer
[8] Park, New York on Long Island?

[9] **A.** Yes.

[10] **THE COURT:** When you said did you look at a plume,
[11] what do you mean by that? Did you look at literature? Did you
[12] look at the site? What did you look at?

[13] **Q.** Did you review literature relating to a plume in Deer Park,
[14] New York?

[15] **A.** Yes. So, here's a depiction of BTEX in MTBE plumes in Deer
[16] Park, New York, 2001. The leak from the gas station occurred
[17] there. The release date is before 1990. How much before is
[18] not known.

[19] The BTEX plume is about a thousand feet long, which is
[20] long for BTEX. And then the MTBE plume in this case is more
[21] than 7,000 feet long.

[22] **MR. STACK:** Your Honor, can we have some foundation as
[23] to the amount, the duration?

[24] **THE COURT:** If he knows. The same questions as I
[25] asked before about the California plume. What do we know about

[1] when the release occurred, how much it was, how it got there,
[2] and where exactly the plume was and when? What are the limits
[3] to the knowledge that you have when you study this?

[4] **MR. STACK:** Objection. Compound.

[5] **THE COURT:** It's sure compound. Nonetheless, it would
[6] speed things along if we just let him answer.

[7] What are the parameters that the scientist usually is
[8] able to know about a plume.

[9] **THE WITNESS:** Typically the total volume of release is
[10] unknown. It can be estimated within limits. And also the
[11] exact timing of the release. Because it happened in the past,
[12] and groundwater contamination is usually discovered after the
[13] fact, the exact timing of the release can usually only be
[14] approximated.

[15] **Q.** And the fact that you don't know everything about how a
[16] spill happened, does that mean that the study of it is somehow
[17] invalid or unreliable?

[18] **A.** Certainly not.

[19] **Q.** Why?

[20] **A.** Well in this case the point is that we have many, many
[21] observations that MTBE moved farther than BTEX. And these
[22] plume length studies illustrate that.

[23] **Q.** And turning to the next one, before I put the slide up,
[24] where is the next one that we're going to look at?

[25] **A.** The next one is at Hyde Park on Long Island, New York.

[1] the size of the release? Was it one release or a continuous
[2] release? What can you tell us in terms of that -- those kinds
[3] of questions?

[4] **THE WITNESS:** I don't have that information.

[5] **MR. STACK:** Your Honor, I would ask then it be taken
[6] down. If we're talking about something the witness has no
[7] foundation, I'd ask that it be taken down.

[8] **THE COURT:** Right. You can do it again on Monday if
[9] he reviews the literature that he says he reviewed.

[10] **MR. STACK:** Yes, your Honor.

[11] **THE COURT:** Okay. So the Deer Park one for now is
[12] out.

[13] **MR. STACK:** There's another one coming up too, your
[14] Honor, the same foundation issues. Can't describe what
[15] happened and when. I don't want it up on the screen.

[16] **THE COURT:** If he can't describe the literature that
[17] supports it, then we'll wait until Monday on that.

[18] **THE WITNESS:** Okay.

[19] **THE COURT:** I don't know what the next one was going
[20] to be, whether you're ready to talk about it.

[21] **THE WITNESS:** I have information on the next one.

[22] **THE COURT:** Okay.

[23] **Q.** Just more generally about this information about the
[24] plumes, when hydrogeologists study plumes of contamination do
[25] they always or do they usually have all this information about

[1] **Q.** What did you review, what sources of data did you review to
[2] get your information on this?

[3] **A.** We have site investigation files and we have data from the
[4] New York DEC, New York Department of Environmental
[5] Conservation, on what is known by the state about the release
[6] and when the release was detected and the concentrations in
[7] groundwater.

[8] **Q.** Can you please give us those details.

[9] **A.** This plume -- the site investigation started in 2001. That
[10] means the plume was discovered 2001 or before.

[11] The estimated plume volume is more than 15,000 pounds
[12] of MTBE, TBA, and the other compounds were released.

[13] They had 8 to 9 feet of floating gasoline product on
[14] the water table. When gasoline is released, it tends to float
[15] on the water table and then dissolve into the groundwater.

[16] **MR. STACK:** Your Honor, is the witness looking at
[17] notes?

[18] **THE COURT:** It looks like he is. What are you looking
[19] at?

[20] **THE WITNESS:** I have notes on statistics on this site.

[21] **THE COURT:** When did you prepare these notes?

[22] **THE WITNESS:** Earlier in the week.

[23] **THE COURT:** Did it yourself?

[24] **THE WITNESS:** With my staff, yes.

[25] **MR. STACK:** May we have a copy, your Honor?